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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,225	06/21/2005	Thomas Gerschwitz	10191/4251	3322

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EXAMINER

BOECKMANN, JASON J

ART UNIT

PAPER NUMBER

3752

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/540,225

Applicant(s)

GERSCHWITZ ET AL.

Examiner

Jason J. Boeckmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-22 is/are pending in the application.
- 4a) Of the above claim(s) 16-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/21/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/21/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 16-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 4/11/2006.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by D'Arrigo (6,766,965).

D'Arrigo shows a fuel injector comprising and piezoelectric actuator (52), a valve spring (70), a valve closure member (flange that the spring 70 rests on in figure 1), a valve needle (58) in operative connection with the actuator and acted upon by the valve spring to activate the valve closure member. The fuel injector further including a hydraulic coupler (see figure 2) which encompasses a piston (24) engaging at least partially in a receiving opening and forming a coupler gap (34) that is filled with hydraulic fluid, wherein a cavity (36) is formed in the piston, the cavity (36) being open

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towards the coupler gap and at least partially filled with the hydraulic fluid and forms a compensation chamber (36).

Regarding claim 13, a throttle opening (16) having a reduced flow cross-section is situated between the compression chamber (36) and the coupler gap (34).

Claims 12-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Lorraine et al (6,676,035).

Lorraine et al shows a fuel injector comprising and piezoelectric actuator (100), a valve spring (48), a valve closure member (50), a valve needle (40) in operative connection with the actuator and acted upon by the valve spring to activate the valve closure member. The fuel injector further including a hydraulic coupler (see figure 2) which encompasses a piston (220) engaging at least partially in a receiving opening and forming a coupler gap (between surfaces 224 and 248) that is filled with hydraulic fluid, wherein a cavity (226) is formed in the piston, the cavity (226) being open towards the coupler gap and at least partially filled with the hydraulic fluid and forms a compensation chamber.

Regarding claim 13, a throttle opening (the gap between element 252 and 230) having a reduced flow cross-section is situated between the compression chamber and the coupler gap.

Regarding claims 14 and 15, the fuel injector further includes a sealing diaphragm (250). The coupler gap discharges outside the receiving opening in a further

compensating chamber filled with hydraulic fluid and delimited by the sealing diaphragm. The sealing diagram is formed from a corrugated tube (figure 2).

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fox (2,661,243) and Hohl et al both show a fuel injector including a hydraulic chamber and a valve spring. Gottlieb et al (EP1 111 230) (already on applicants 1449 form) shows a fuel injector comprising a hydraulic coupler including a piston, a coupler gap, and a chamber formed in the piston, being open towards the coupler gap.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason J. Boeckmann whose telephone number is (571) 272-2708. The examiner can normally be reached on 7:30 - 5:00 m-f, first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Scherbel can be reached on (571) 272-4919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JJB JJB 9/12/06



David A. Scherbel
Supervisory Patent Examiner
Group 3700